

401 KAR 4:030. Design criteria for dams and associated structures.

RELATES TO: KRS 151.250

STATUTORY AUTHORITY: KRS 151.125, 224.01-110(6)(b), 224.10-100(17)

NECESSITY, FUNCTION, AND CONFORMITY: This administrative regulation is necessary to establish minimum design criteria for dams and associated structures constructed in Kentucky.

Section 1. This administrative regulation applies to all dams as defined by KRS 151.100 and to all other impounding obstructions which might create a hazard to life or property.

Section 2. Except as modified in this administrative regulation, the procedures outlined by the latest edition of "Design of Small Dams" (Second Edition, 1973), available from the U.S. Government Printing Office and the Department of Reclamation, herein filed by reference, shall be the minimum criteria.

Section 3. The Division of Water Engineering Memorandum No. 5 (2-1-75) outlined as follows: Section A. Definitions; Section B. Structure Classification; Section C. Hydrologic Criteria; Section D. Sediment Storage; Section E. Principal Spillways; Section F. Emergency Spillways; Section G. Earth Embankments; and Section H. Utilities Under Embankments; is hereby incorporated by reference and made a part of this administrative regulation as if fully set out herein. Copies are available from the Division of Water upon request.

Section 4. Structure types not generally used in Kentucky, i.e. gravity, buttress, steel, timber, etc., will be considered on an individual basis and reviewed in accord with prevailing practices that are currently accepted by the engineering profession.

Section 5. In all cases the safety of the structure, the water and/or other material impounded therein, property and human life will be the principal governing factors. Under no circumstances will the proposed use of the structure and its contents, or the cost of providing an unquestionably safe structure be allowed to assume precedence over the possible hazard involved.

Section 6. Structures which are to be repaired or reconstructed must be made to conform to the criteria established by this administrative regulation.

Section 7. Each of the following stated criteria indicates whether the limit is a maximum or minimum limit and is not to be construed as being satisfactory design criteria at all sites. Professional judgment, state laws and administrative regulations, investigations, or analysis may dictate more conservative criteria.

Section 8. (1) Approval of all plans and specifications shall be divided into two (2) distinct parts:

(a) Issuance of a construction permit pursuant to KRS 151.250 shall constitute approval of the final engineering documents to allow construction to be started; and

(b) Final written approval by the cabinet upon receipt of the "as-built" plans and specifications will constitute approval to impound.

(2) No approval to impound water and/or other material is implied or is in any way granted until the "as-built" plans and specifications have been approved, an on-site inspection has been made, and a written statement of approval issued. It is recommended that the owner and/or his engineer contact this division before initiation of final design for a predesign conference.

Section 9. All plans and specifications submitted for consideration must bear the seal and signature of the responsible engineer as defined in KRS 322.010(2), except officers and employees of the United States Government while engaged in engineering for the government. Each sheet of the drawings shall bear the seal and signature of the engineer or engineers responsible for its preparation.

Section 10. All structures, other than Class A as defined in Engineering Memorandum No. 5 (2-1-75) shall have a complete subsurface investigation and soil analysis submitted as an integral part of the drawings.

Section 11. (1) Elevation area capacity data and elevation discharge data must be submitted as a part of the plans for each structure. This elevation area capacity data shall give the area and capacities from the elevation of the lowest point in the impoundment area to at least the elevation at the top of the dam. When the configuration of the structure will not allow the elevation discharge relationship to be developed by methods accepted as standard by the engineering profession, the structure must provide the storage necessary to contain the entire storm run-off without probable damage to the structure or creating an unacceptable hazard to life or property.

(2) When this required basic information is furnished by the responsible design engineer, the Division of Water will upon request assist the engineer in preparing the flood routings required by Engineering Memorandum No. 5 (2-1-75).

(3) In the event that the elevation area capacity data is not furnished or the flood routings show that insufficient floodwater storage has been provided, the plans will be returned to the design engineer without being approved.

Section 12. All information concerning elevations shall refer to mean sea level and the use of assumed elevations for any purpose is prohibited. Should an error in either the horizontal control or vertical control become known during construction, the necessary information to correct the distances and the elevations shall be referred to on the first sheet of the "as-built" drawing or referred to in the index. Clearly marked reference points and bench marks shall be maintained at the job site by the responsible engineer until final written approval is received.

Section 13. Unless waived in writing by the cabinet, no structure shall be approved unless a positive means is provided to pass water through the structure in sufficient quantity to satisfy the needs of downstream users and to empty the reservoir within a reasonable length of time. Conditions considered in determining downstream water requirements and required minimum time to empty the impoundment shall be determined by the responsible engineer and referred to on the drawings.

Section 14. Construction supervision and inspection must be performed by or under the direction of the design engineer. Unless otherwise directed by the cabinet the engineer shall submit monthly progress reports on forms to be supplied by the cabinet. Copies of all testing reports shall be submitted with the progress reports.

Section 15. All "as-built" documents shall be submitted by the responsible engineer in the form of permanent type drawings of a standard and uniform size. Variations in size will be permitted for federal agencies in order that they may use their standard drawings. Drawings that do not conform to standard practices or drawings that are not easily legible will not be accepted.

Section 16. Because of the cabinet's statutory duty to review federal projects for the Commonwealth under KRS 151.220, the United States Army Corps of Engineers is exempt from the provi-

sions of this administrative regulation and KRS 151.250. (DOW-Rg-2; 1 Ky.R. 759; eff. 6-11-1975; Crt eff. 8-9-2018.)